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WATER SUPPLY OUTLOOK

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

for

COLORADO and NEW MEXICO

UNITED STATES DEPARTMENT of AGRICULTURE...SOIL CONSERVATION SERVICE and

COLORADO STATE UNIVERSITY
STATE ENGINEER of COLORADO
and STATE ENGINEER of NEW MEXICO

Data included in this report were obtained by the agencies named above in cooperation with the Bureau of Reclamation, U.S. Forest Service, National Park Service and other Federal, State, and private organizations.

MAY 1, 1963

UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

To Recipients of Water Supply Outlook Reports:

The climate of the cultivated and populated areas of the West is characterized by relatively dry summer months. Such precipitation as occurs falls mostly in the winter and early spring months when it is of little immediate benefit to growing crops. Most of this precipitation falls as mountain snow which stays on the ground for months, melting later to sustain streamflow during the period of greatest demand during late spring and summer. Thus, nature provides in mountain snow an imposing water storage facility.

The amount of water stored in mountain snow varies from place to place as well as from year to year and accordingly, so does the runoff of the streams. The best seasonal management of variable western water supplies results from advance estimates of the streamflow.

A snow survey consists of a series of about ten samples taken with specially designed snow sampling equipment along a permanently marked line, up to 1000 feet in length, called a snow course. The use of snow sampling equipment provides snow depth and water equivalent values for each sampling point. The average of these values is reported as the snow survey measurement for a snow course.

Snow surveys are made monthly or semi-monthly beginning in January or February and continue through the snow season until April, May or June. Currently more than 1400 western snow courses are measured each year. These measurements furnish the key data for water supply forecasts.

Streamflow forecasts are obtained by a comparison of total or maximum snow accumulation, as measured by snow water equivalent, to the subsequent spring and summer or snowmelt season runoff over a period of years. The snow water equivalent measured in selected snow courses provides most of the index to the streamflow forecast for the following season. More accurate forecasts are usually obtained when other factors such as soil moisture, base flow and spring precipitation are considered and included in the forecast procedure. Early season forecasts assume average climatic conditions through the snowmelt season.

Listed below are the Federal-State-Private Cooperative Snow Survey and Water Supply Forecast reports available for the West which contain detailed information on snow survey measurements, streamflow forecasts, reservoir storage, soil moisture and other guide data to water management and conservation decisions. Soil Conservation Service Reports may be secured from Water Supply Forecasting Unit, Soil Conservation Service, P.O. Box 4170, Portland 8, Oregon.

PUBLISHED BY SOIL CONSERVATION SERVICE

REPORTS	ISSUED	LOCATION	COOPERATING WITH
RIVER BASINS			
WESTERN UNITED STATES	MONTHLY (FEBMAY)	PORTLANO, OREGON	_ ALL COOPERATORS
STATES			
ALASKA	MONTHLY (MARMAY)	PALMER, ALASKA	_ ALASKA S.C.D.
AR I ZONA	SEMI-MONTHLY (JAN.15 - APR.1)		_ SALT R. VALLEY WATER USERS ASSOC ARIZ. AGR. EXP. STATION
COLORADO ANO NEW MEXICO	MONTHLY (FEBMAY)	FORT COLLINS. COLORAGO _	- COLO. STATE UNIVERSITY COLO. STATE ENGINEER N. MEX. STATE ENGINEER
IOAHO	MONTHLY (JANJUNE)_	BOISE, IOAHO	_ IOAHO STATE RECLAMATION ENGINEER
MONTANA	MONTHLY (JAN:-JUNE)	BOZEMAN. MONTANA	MONT. AGR. EXP. STATION
NEVAOA	MONTHLY (JANMAY)	RENO, NEVACA	NEVAGA DEPT. OF CONSERVATION AND NATURAL RESOURCES - DIVISION OF WATER RESOURCES
OREGON	MONTHLY (JANJUNE)	PORTLANO, OREGON	OREG. STATE UNIVERSITY OREGON STATE ENGINEER
UTAH	MONTHLY (JANJUNE)_	SALT LAĶE CITY, UTAH	_ UTAH STATE ENGINEER
WASHINGTON	MONTHLY (FEB JUNE)_	SPOKANE, WASHINGTON.	WN. STATE DEPT. OF CONSERVATION
WYOMING	MONTHLY (FEBJUNE)	CASPER. WYOMING	_ WYOMING STATE ENGINEER
	PUBLISHED BY	OTHER AGENCIES	
REPORTS	ISSUED	•	AGENCY
BRITISH COLUMBIA	MONTHLY (FEBJUNE)		, DEPT. OF LANOS, FORESTS AND S, PARLIAMENT BLOG., VICTORIA,
CALLEGRALA	MONTHLY (FER MAY)	CALLE DERT OF	WATER DESCRIPCES P.O. BOY 388

SACRAMENTO, CALIF.

FEDERAL-STATE COOPERATIVE

SNOW SURVEYS AND WATER SUPPLY FORECASTS

for

COLORADO RIVER, PLATTE RIVER ARKANSAS RIVER AND RIO GRANDE DRAINAGE BASINS

> Issued May 1, 1963

Report Prepared By
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and
Don W. McAndrew, Assistant Snow Survey Supervisor
Fort Collins, Colorado

United States Department of Agriculture
Soil Conservation Service
and
Colorado Agricultural Experiment Station
Fort Collins, Colorado
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S. E. Reynolds State Engineer State of New Mexico

General Series Paper No. 782 Colorado Agricultural Experiment Station

WATER SUPPLY OUTLOOK FOR COLORADO AND NEW MEXICO as of APRIL 1, 1963





COLORADO IN GENERAL IS IN FOR A NEAR DROUTH PERIOD THIS SUMMER. ALL AREAS OF THE STATE WILL HAVE
SEVERE WATER SHORTAGES EXCEPT THOSE WITH GOOD BACK
UP STORAGE. THIS WINTER PRODUCED ONE OF THE POOREST SNOW PACKS SINCE 1954. VALLEY SOILS CONTAIN
LITTLE IF ANY MOISTURE, REFLECTING THE LACK OF
PRECIPITATION ESPECIALLY ON THE EAST SLOPE. HEAVY
SUMMER RAINFALL COULD REDUCE THE SHORTAGE, BUT THIS
RARELY HAPPENS.



THE MAIN STEM OF THE RIO GRANDE WILL BE EXTREMELY DEFICIENT OF WATER THIS SUMMER UNLESS THE AREA RECEIVES MUCH ABOVE NORMAL RAINFALL. SOILS IN THE VALLEYS AS WELL AS THE MOUNTAINS ARE EXTREMELY DRY AND MUCH WATER WILL BE NEEDED TO FILL THIS VOID. SNOW PACK ON THE MAIN STEM HAS BEEN VERY SHORT ALL WINTER EXCEPT IMMEDIATELY EAST OF SANTA FE AND ON THE HEADWATERS OF THE PECOS. THE PECOS AND CANADIAN MAY HAVE LIMITED SHORTAGES, BUT HAVE GOOD STORAGE AND FORECASTS ARE GENERALLY GOOD IN THE HEADWATERS AREA.

WATER SUPPLY OUTLOOK

THE MAP ON THIS PAGE INDICATES THE MOST PROBABLE WATER SUPPLY AS OF THE DATE OF THIS REPORT. ESTIMATES ASSUME AVERAGE CONDITIONS OF SNOW FALL, PRECIPITATION AND OTHER FACTORS FROM THIS DATE TO THE END OF THE FORECAST PERIOD. AS THE SEASON PROGRESSES ACCURACY OF ESTIMATES IMPROVE. IN ADDITION TO EXPECTED STREAMFLOW, RESERVOIR STORAGE, SOIL MOISTURE IN IRRIGATED AREAS, AND OTHER FACTORS ARE CONSIDERED IN ESTIMATING WATER SUPPLY. ESTIMATES APPLY TO IRRIGATED AREAS ALONG THE MAIN STREAMS AND MAY NOT INDICATE CONDITIONS ON SMALL TRIBUTARIES.

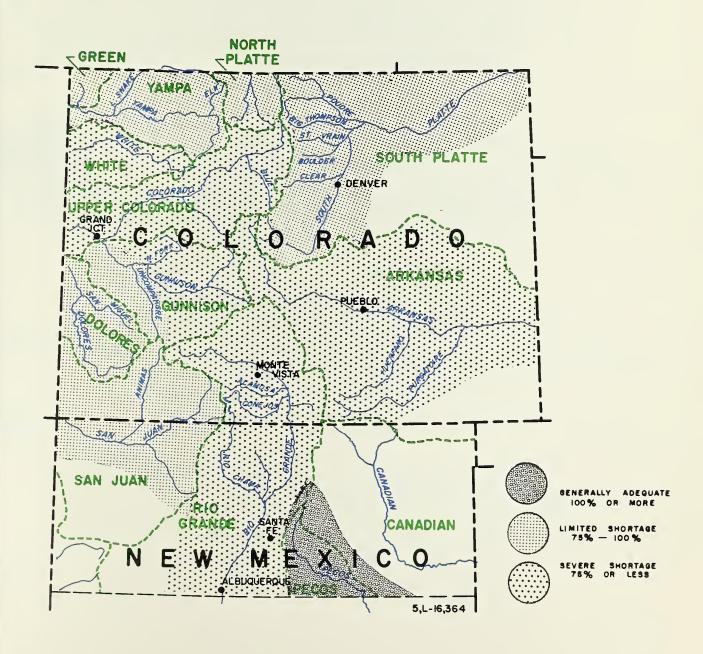


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WATER SUPPLY OUTLOOK BY MAJOR WATERSHED AREAS

WATERSHED I - SOUTH PLATTE RIVER WATERSHED

Describes water supply conditions in Fort Collins, Big Thompson, Longmont, Boulder Valley, Jefferson, Teller-Park, Douglas County, Morgan, Kiowa, West Arapahoe, West Adams, East Adams, Platte Valley, Southeast Weld, and West Greeley Soil Conservation Districts.

WATERSHED II - ARKANSAS RIVER WATERSHED

Describes water supply conditions in Lake County, Upper Arkansas, Fremont, Custer County Divide, Fountain Valley, Black Squirrel, Horse-Rush Creek, Central Colorado, Turkey Creek, Pueblo, Bessemer, Olney Boone, Cheyenne, Upper Huerfano, Stonewall, Spanish Peaks, Purgatoire, Branson Trinchera, Western Baca County, Southeastern Baca County, Two Buttes, Bent, Timpas, Northeast Prowers, Prowers, West Otero, East Otero, and Big Sandy Soil Conservation Districts.

WATERSHED III - RIO GRANDE WATERSHED (COLORADO)

Describes water supply conditions in Rio Grande, Center, Mosca Hooper, Mt. Blanca, Sanches, and Culebra Soil Conservation Districts.

WATERSHED IV - RIO GRANDE WATERSHED (NEW MEXICO)

Describes water supply conditions in Lower Cebolla, Abiquiu-Vallecitos, Eastern Taos, Lindrith, Coyote-Canones, Espanola Valley, Pojoaque, Jemez, Santa Fe-Sandoval, Tijeras, Cuba, and Edgewood Soil Conservation Districts.

WATERSHED V - DOLORES, SAN JUAN, AND ANIMAS RIVERS WATERSHED

Describes water supply conditions in San Miguel Basin. Dove Creek, Dolores. Mancos, LaPlata, Pine River, San Juan, and Glade Park Soil Conservation Districts.

WATERSHED VI - GUNNISON RIVER WATERSHED

Describes water supply conditions in Delta, Gunnison, Cimarron, Shavano, and Uncompandere Soil Conservation Districts.

WATERSHED VII - COLORADO RIVER WATERSHED

Describes water supply conditions in DeBeque, Lower Grand Valley, Bookcliff, Eagle County, Middle Park, Glade Park, Upper Grand Valley, Plateau Valley, South Side, and Mt. Sopris Soil Conservation Districts.

WATERSHED VIII - YAMPA, WHITE AND NORTH PLATTE RIVERS WATERSHED

Describes water supply conditions in Yampa, Moffat, West Routt, East Routt, North Park, Upper White River, Lower White River, and Douglas Creek Soil Conservation Districts.

WATERSHED IX - LOWER SOUTH PLATTE RIVER WATERSHED

Describes water supply conditions in Sedgwick, South Platte, Haxton, Peetz, Padroni, Morgan Rock Creek and Yuma Soil Conservation Districts.

WATER SUPPLY OUTLOOK FOR THE SOIL CONSERVATION DISTRICTS IN THE

SOUTH PLATTE RIVER WATERSHED IN COLORADO

as of

MAY 1, 1963

U. S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE COLORADO EXPERIMENT STATION - STATE ENGINEERS OF COLORADO AND NEW MEXICO

SNOW COVER



SNOW COVER STILL IS MUCH BELOW NORMAL WITH ALMOST ALL HOPE CONE NOW FOR EVEN AN AVERAGE SNOW PACK. ONLY ONE SMALL AREA NOW CONTAINS MORE SNOW THAN ON MARCH 1. SNOW IS MELTING RAPIDLY AND PRACTICALLY ALL SNOW HAS MELTED UP TO AN ELEVATION OF 9,800 FEET. SNOW COVER THROUGHOUT THE BASIN IS 61% OF NORMAL.

SOIL MOISTURE



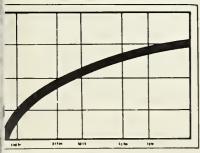
SOIL MOISTURE IS NOW INCREASING AT THE HIGHER ELEVATIONS, DUE TO THE MELTING SNOW. NONE OF THE STATIONS ARE INDICATING CAPACITY WHICH MEANS NOT ENOUGH SNOW HAS MELTED TO CAUSE MATERIAL RUNOFF. PRACTICALLY ALL STATIONS ARE NOW VOID OF SNOW. VALLEY SOIL ARE EXTREMELY DRY OVER THE ENTIRE WATERSHED.

RESERVOIR STORAGE



A BRIGHT NOTE IS THE RELATIVELY GOOD RESERVOIR CARRYOVER STORAGE. MOST OF THE LAKES AND RESERVOIRS CONTAIN MORE THAN NORMAL WATER. THIS STORAGE CAN BE FIGURED TO CARRY SOME OF THE WATER USERS THROUGH THE SUMMER.

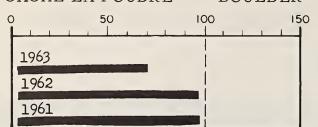
EXPECTED STREAMFLOW



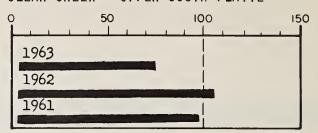
FORECASTS ARE GENERALLY IN THE 65% RANGE, HOWEVER, THE BIG THOMPSON MAY BE SLIGHTLY HIGHER BECAUSE OF A SLIGHTLY BETTER SNOW PACK. THIS IS NOT ENOUGH TO PRODUCE NORMAL CROPS UNLESS SUMMER RAINFALL IS MUCH ABOVE NORMAL.

"THE CONSERVATION OF WATER BEGINS WITH THE SNOW SURVEY"
ISSUED BY: SOIL CONSERVATION SERVICE

CACHE LA POUDRE - BOULDER



CLEAR CREEK - UPPER SOUTH PLATTE



RESERVOIR STORAGE (1,000 AC. FT.)

MEASURED FIRST OF MONTH

SOIL MOISTURE

		··· Bitoon	ED FIRST OF	MONTH					
RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	15 YEAR AVERAGE 1943 - 57	STATION	CAPACITY (INCHES)	THIS YEAR	LAST YEAR	AVERAGE (ALL PAST DATA)
Antero	33.0	15.7	15.7	14.9	Alpine Camp	6.9	6.0	4.9	4.3
Barr Lake	32.2	24.5	28.5	24.3	Beaver Dam	7.1	5.0	6.3	4.7
Black Hollow	8.0	4.6	5.1	3.4	Feather	10.1	9.2	9.6	8.1
Boyd Lake	44.0	39.4	43.0	18.5	Guard Station		5.0	4.7	4.7
Cache La Poudre		8.4	8.6	7.6	Hoop Creek	4.9	3.9	3.6	2.9
Carter Lake	108.9	104.0	107.3	69.2	Hoosier Pass	7.8	4.4	7.8	5.9
Chambers Lake	8.8	1.8	5.3	2.6	Kenosha Pass	4.4	3.6	4.0	3.7
Cheeseman	79.0	40.5	79.1	52.7	Laramie Road	12.4	8.7	11.7	9.0
Cobb Lake	34.3	18.6	20.4	5.5	Two Mile	9.1	4.4	6.7	5.6
Eleven Mile	81.9	96.5		69.4	Clear Creek	9.5	4.8	7.1	5.9
	11.6	10.1	9.6	7.9	Ologi Ologi	7•7	4.0	(• ⊥	7.7
Fossil Creek Gross	43.1		33.1						
		17.3		2.0					
Halligan	6.4	6.3	137.4	94.0					
Horsetooth	143.5	114.7	8.8	7.0					
Lake Loveland	14.3	12.3		8.4	•	L PROFILI	C 4 PEET	ncen	' '
Lone Tree	9.2	7.7	9.1		AL	L PROFILI	ES 4 FEET	DEEP	
Mariano	5.4	5.5	5.6	3.1 3.5					
Marshall	10.3	1.0	7.0	15.1					
Marston	18.9	16.0	16.3	12.8					
Milton	24.4	15.3	15.4						
Standley	18.5	9.4	16.1	12.4					
Terry Lake	8.2	5.7	5.8	5.0		OW EC	אם דיכ	A C IT	
Union	12.7	10.6	12.0	7.2	STREAMFLO			45.1	
Windsor	18.6	14.7	14.4	11.4	(1,000				
	'				May APRIC THROUGH	CH SEPTEM	BER	muua T	

PRECIPITATION

Dec-March

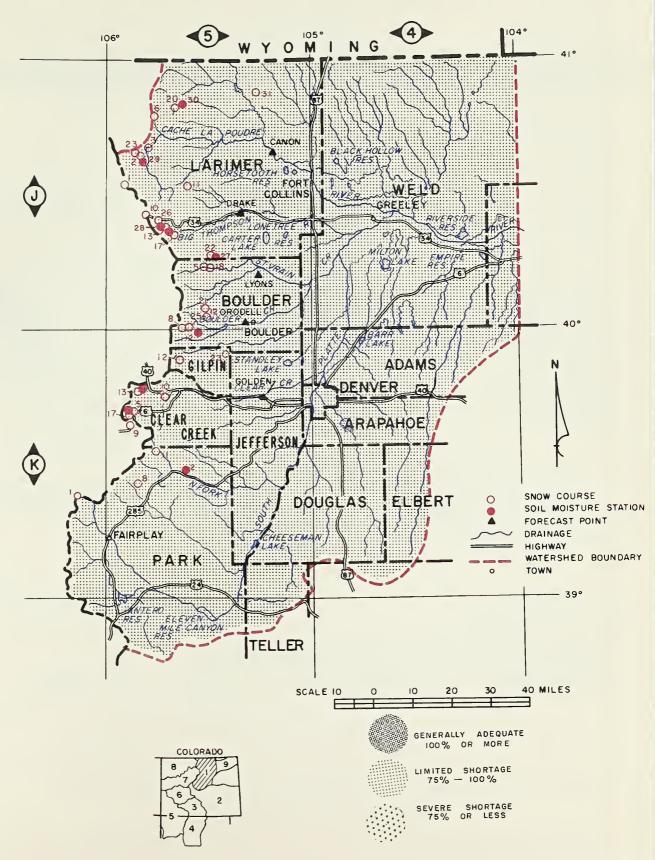
STATION	AUGUST T NOVEM AVE.	IBER	WIN AVE.	TER DEP.
Upper South Platte	2.28	-2.55	2.89	83

PRELIMINARY U.S. WEATHER BUREAU DATA AVERAGE OF SELECTED STATIONS

May APRIC THROUGH SEPT				
STREAM AND STATION	¢ Al	ECAST RIL - EPT.	THIS YEAR % AVERAGE	AVERAGE 1943-57
Big Thompson at Drake(2) Boulder at Orodell Cache La Poudre at Canon Clear Creek at Golden (3) Saint Vrain at Lyons *May through September		80 34 115 94 52	1	101 52 183 132 80

- (1) Observed flow minus diversions from Michigan, Colorado and Laramie rivers, plus diversions for irrigation and municipal use above station.
- (2) Observed flow plus by-pass to power plants.
- (3) Observed flow minus diversions through Jones Tunnel.

SOUTH PLATTE RIVER WATERSHED IN COLORADO



SNOW		CURRE	NT INFORMA	TION	PAST R	ECORD
SNOW COURSE	NO.	DATE OF	SNOW DEPTH	WATER	WATER C (INCHE	ES)
		SURVEY	(INCHES)	(INCHES)	LAST YEAR	AVERAGE 1943 - 57
		DATE	SNOW	WATER	WATER C	ONTENT

NOTE: * - 1943 - 57 (ADJUSTED AVERAGES)

NS - NO SURVEY
(A) - AIR OBSERVED
(B) - ON ADJACENT DRAINAGE

This Report Prepared by
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Ft. Collins, Colorado

RETURN IF NOT DELIVERED

UNITED STATES

DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE

Snow Survey Colorado State University Ft. Collins, Colorado

OFFICIAL BUSINESS

WATER SUPPLY OUTLOOK FOR THE SOIL CONSERVATION DISTRICTS IN THE

ARKANSAS RIVER WATERSHED IN COLORADO as of

MAY 1, 1963

U. S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE COLORADO AND NEW MEXICO

SNOW COVER



SNOW FALL WAS PRACTICALLY NONE EXISTENT DURING THE MONTH OF APRIL. PRACTICALLY ALL SNOW HAS DISAPPEARED BELOW THE 10,00 FEET LEVEL. THE SNOW COVER IS NOW APPROACHING THE MINIMUM DURING THE LAST 15 YEARS. ACTUALLY THE COVER IS ABOUT 54% OF NORMAL.

SOIL MOISTURE



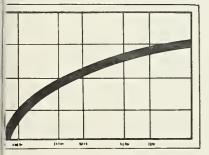
MOUNTAIN SOILS ARE STARTING TO WET UP TO SOME EXTENT, BUT NONE HAVE REACHED CAPACITY EVEN THOUGH SNOW HAS NOW MELTED AT MOST STATIONS. THIS WOULD INDICATE VERY LITTLE RUNOFF WILL MATERIALIZE FROM MEDIUM ELE-VATIONS.

RESERVOIR STORAGE



TO ADD TO THE GLOOM RESERVOIR STORAGE IS VERY POOR. SOME WATER HAS ALREADY BEEN USED LEAVING RESERVOIRS NEARLY EMPTY. JOHN MARTIN IS EMPTY. PRECIPITATION IS DESPERATELY NEEDED AS THE CROPS IN MOST CASES CANNOT BE IRRIGATED UP.

EXPECTED STREAMFLOW



FORECASTS WERE LOWERED AGAIN THIS MONTH. WITHOUT GOOD SUMMER RAINS A SEVERE WATER SHORTAGE WILL EXIST ON THE ARKANSAS DRAINAGE THIS SUMMER. EXPECTED RUNOFF WILL BE ONLY ABOUT ONE-HALF OF WHAT CAN NORMALLY BE EXPECTED.

"THE CONSERVATION OF WATER BEGINS WITH THE SNOW SURVEY"

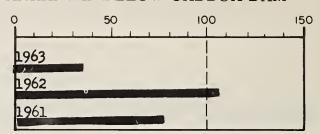
ISSUED BY: SOIL CONSERVATION SERVICE

WATER SUPPLY OUTLOOK IN PERCENT OF 1943-57 AVERAGE

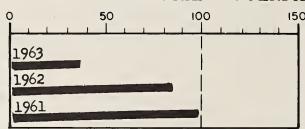
ARKANSAS ABOVE CADDOA DAM

1963

ARKANSAS BELOW CADDOA DAM



PURGATOIRE - CUCHARAS - HUERFANO



RESERVOIR STORAGE (1,000 AC. FT.)

_				
RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	I5 YEAR AVERAGE 1943 - 57
Alaba Ossala	61.6	0	0	11.2
Adobe Creek		_		
Clear Creek	11.4	8.2	10.4	4.3
Cucharas	40.0	0	8.0	4.4
Great Plains	150.0	9.8	39.4	51.1
Horse Creek	26.9	0	12.0	7.4
John Martin	366.6	0	0	44.8
Meredith	41.9	6.8	23.2	13.3
Model	15.0	3.1	5.1	2.3
Sugar Loaf	17.4	4.8	9.0	7.6
Twin Lakes	57.9	23.7	17.1	19.3

PRECIPITATION

Dec-March

STATION	AUGUST THROUGH NOVEMBER AVE. DEP.		WINTER AVE. DEP.		
Arkansas	2.96	-2.52	3.27	86	

PRELIMINARY U.S. WEATHER BUREAU DATA AVERAGE OF SELECTED STATIONS

MEASURED FIRST OF MONTH

SOIL MOISTURE

STATION	CAPACITY (INCHES)	THIS YEAR	LAST YEAR	AVERAGE (ALL PAST DATA)
Garfield King LaVeta Pass Leadville Twin Lakes Tunnel	6.7 3.3 11.9 7.8 4.5	4.4 2.4 9.2 5.5 3.1	4.1 2.2 5.6 3.1	4.3 2.1 11.8 4.8 3.1

ALL PROFILES 4 FEET DEEP

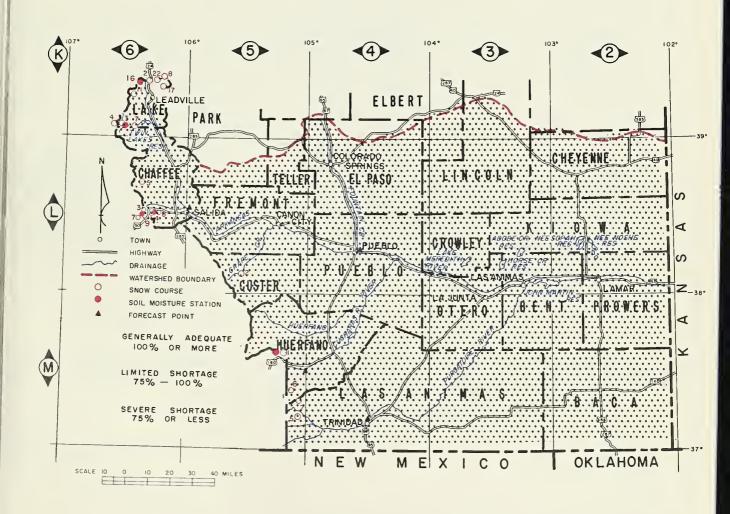
STREAMFLOW FORECAST (1,000 AC. FT.)

Mayaprie through september					
STREAM AND STATION	FORECAST APRIL - SEPT.		AVERAGE 1943-57		
Arkansas at Pueblo (1) Arkansas at Salida (1) Cucharas near LaVeta Purgatoire at Trinidad	147 158 8 19	46. 50 62 38	323 318 13 50		

(1) Observed flow plus change in storage in Clear Creek, Twin Lakes, and Sugar Loaf Reservoirs minus diversions through Busk-Ivanhoe and Twin Lake Tunnels and Ewing, Fremont Pass, Wurtz and Columbine Ditches.

*May Through September

ARKANSAS RIVER WATERSHED IN COLORADO





SNOW		CURRE	NT INFORMA	TION	PAST R	ECORD
SNOW COURSE	NO.	DATE OF SURVEY	SNOW DEPTH (INCHES)	WATER CONTENT (INCHES)	WATER C (INCHE LAST YEAR	
ARKANSAS RIVER Blue Lakes Bigelow Divide Bourbon Cooper Hill Cucharas Pass East Fork Feur Mile Park Fremont Pass Garfield LaVeta Pass (B) Monarch Pass St. Elmo (A) Tennessee Pass Tomichi Twin Lakes Tunnel Westcliffe	5M6 5L3 5M5 6K23 5M7 6K17 6K8 6L8 5M1 6L4 6L5 6K2 6L7 6K3 512	4-29	0 0 0 35 0 7 0 39 7 0 21 36 9 12 15 0	0 0 9.0 0 2.3 0 12.6 2.6 0 9.8 10.1 3.0 4.6 4.8	1.4 1.7 15.2 8.0 0.3 21.2 10.7 0 21.0 11.2 9.3 11.3 10.8 0	8.0* 0.7 18.6 2.8 17.7 11.2* 6.8 9.2 4.0*

NOTE: * - 1943 - 57 (ADJUSTED AVERAGES)
NS - NO SURVEY
(A) - AIR OBSERVED
(B) - ON ADJACENT DRAINAGE

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Snow Survey Colorado State University Ft. Collins, Colorado

OFFICIAL BUSINESS

WATER SUPPLY OUTLOOK
FOR THE SOIL CONSERVATION DISTRICTS IN THE

UPPER RIO GRANDE WATERSHED IN COLORADO as of

MAY 1, 1963

U. S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE COLORADO EXPERIMENT STATION - STATE ENGINEERS OF COLORADO AND NEW MEXICO

SNOW COVER



SNOW COVER OVER THE ENTIRE BASIN IS FAR BELOW NORMAL. WHAT SNOW THERE WAS AT LOW TO MEDIUM ELEVATIONS IS RAPIDLY DISAPPEARING. THERE IS NO HOPE NOW FOR ENOUGH SNOW TO BE OF MUCH HELP.

SOIL MOISTURE



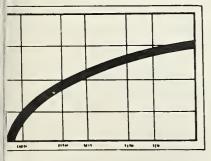
SOIL MOISTURE IS INCREASING IN THE MOUNTAIN AREAS, BUT THIS IS TO BE EXPECTED WITH THE MELTING OF SNOWS. SOIL MOISTURES AT THIS TIME SHOULD BE SATURATED. THIS INDICATED VERY LITTLE IF ANY WATER WILL ORIGINATE AT THE LOWER TO MEDIUM ELEVATIONS. VALLEY SOIL IS EXTREMELY DRY REFLECTING THE LACK OF PRECIPITATION.

- RESERVOIR STORAGE



CARRYOVER STORAGE IN THE HIGH RESERVOIRS IS NOT QUITE NORMAL AND WILL BE OF LITTLE ASSISTANCE IN AUGMENTING THE SNOW MELT RUNOFF. IT IS DOUBT-FUL IF ANY OF THESE RESERVOIRS FILL THIS YEAR.

EXPECTED STREAMFLOW

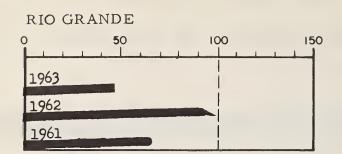


MAY-SEPTEMBER FLOWS OF THE RIO GRANDE AND IT'S TRIBUTARIES ARE BEING FORECASTED LOWER THAN ANYTIME IN THE LAST 10 YEARS. PUMPING WILL HAVE TO BE RELIED UPON TO A GREAT EXTENT TO PRODUCE CROPS. HEAVY SUMMER RAINFALL WOULD HELP THE SITUATION, BUT THIS IS NOT USUALLY THE CASE. WATER SHORTAGES WILL EXIST OVER THE ENTIRE BASIN.

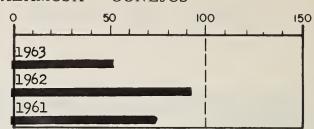
"THE CONSERVATION OF WATER BEGINS WITH THE SNOW SURVEY"

ISSUED BY: SOIL CONSERVATION SERVICE

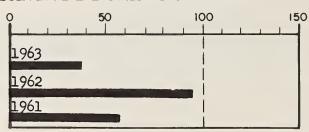
WATER SUPPLY OUTLOOK IN PERCENT OF 1943-57 AVERAGE



ALAMOSA - CONEJOS



SANGRE DE CRISTO STREAMS



RESERVOIR STORAGE (1,000 AC. FT.)

RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	15 YEAR AVERAGE 1943 - 57
Continental Platoro Rio Grande Sanchez Santa Maria Terrace	26.7	4.7	7.2	8.9
	60.0	5.9	6.5	5.3
	45.8	12.0	24.3	11.6
	103.2	7.9	16.6	11.1
	45.0	5.0	8.3	8.4
	17.7	4.4	13.0	3.5

MEASURED FIRST OF MONTH

PRECIPITATION

		Dec-March	
STATION	AUGUST THROUGH		
Rio Grande (Colo.)	4.97 -1.47	6.38 -3.93	

PRELIMINARY U.S. WEATHER BUREAU DATA AVERAGE OF SELECTED STATIONS

SOIL MOISTURE

STREAMFLOW FORECAST (1,000 AC. FT.

STATION	CAPACITY (INCHES)	THIS YEAR	LAST YEAR	AVERAGE (ALL PAST DATA)
Alberta Park	8.2	5.3		5.6
Bristol View	6.1	6.0		4.4
LaVeta Pass	11.9	9.2		11.8
Mogote	10.7	7.5		9.0

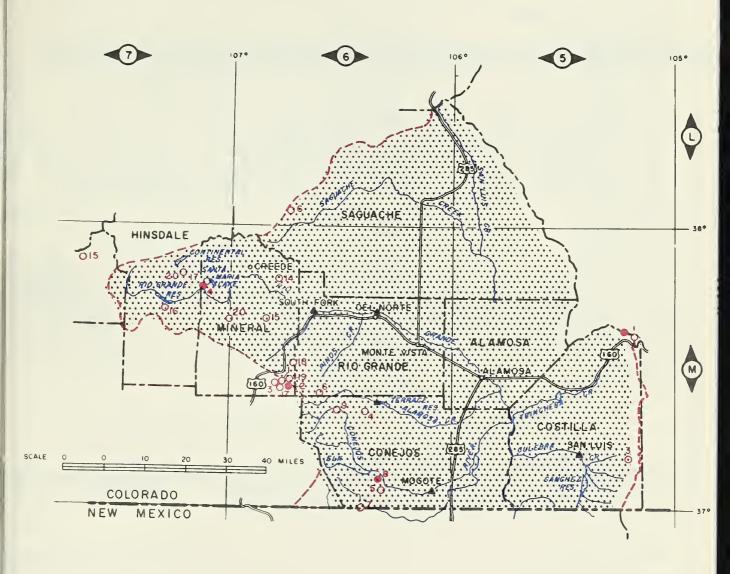
ALL PROFILES 4 FEET DEEP

May APRIL THROUGH SEPTEMBER					
STREAM AND STATION	FORECAST ADRIL - SEPT.		AVERAGE 1943-57		
Alamosa above Terrace	34	52	65		
Conejos near Mogote	109	62	177		
Culebra at San Luis (2)	9	39	23		
Rio Gr. Nr. Del Norte (1)	230	48	448		
Rio Gr. at 30Mi.Bdg. (1)	74		125		
South Fork at South Fork	65	60	108		

May through September
 Observed flow plus change in storage in Santa Maria, Rio Grande, and Continental Reservoir

(2) Observed flow plus changes in storage in Sanchez Reservoir.

UPPER RIO GRANDE WATERSHED IN COLORADO







SNOW CURRENT INFORMATION PAST RECORD				ECORD		
SNOW COURSE	NO.	DATE OF SURVEY	SNOW DEPTH (INCHES)	WATER CONTENT (INCHES)	WATER CO (INCHE LAST YEAR	
RIO GRANDE IN COLORADO Cochetopa Pass Hiway Lake Humphreys Pass Creek Pool Table Mountain Porcupine Red Mountain Pass (B) Santa Maria Upper Rio Grande Wolf Creek Pass Wolf Creek Summit (B) ALAMOSA RIVER Silver Lakes Summitville CONEJOS RIVER Cumbres Pass Platoro River Springs SANGRE DE CRISTO RANGE (Colo.) Blue Lakes (B) Cucharas Pass (B) Culebra LaVeta Pass	616 6M19 6M15 6M18 5M14 7M20 7M15 7M17 7M16 6M1 6M1 6M6 6M7 6M9 6M5 5M6 5M7 5M3 5M1	4-23 4-29 4-29 4-28 4-29 4-29 4-29 4-29 4-29 4-29 4-29 4-29 4-29 4-29 4-29 4-29 4-29	0 53 0 0 0 4 61 0 0 21 65 0	0 17.6 0 0 0 1.7 24.3 0 0 8.7 21.3	2.6 31.9 0 2.3 0 16.0 35.3 0 1.6 28.0 37.1 0 24.3 21.2 23.3 0	2.8* 0.2* 2.2* 5.9* 25.6* 0.7 2.3 25.4 30.5 0.6 21.9 13.3 11.0* 1.0

NOTE: * - 1943 - 57 (ADJUSTED AVERAGES)
NS - NO SURVEY
(A) - AIR OBSERVED
(B) - ON ADJACENT DRAINAGE

This Report Prepared by
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DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE

Snow Survey Colorado State University Ft. Collins, Colorado

OFFICIAL BUSINESS

RIO GRANDE WATERSHED IN NEW MEXICO

as of

MAY 1, 1963

U. S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE COLORADO EXPERIMENT STATION - STATE ENGINEERS OF COLORADO AND NEW MEXICO

SNOW COVER



ONLY A FEW SNOW COURSES ARE MEASURED IN NEW MEXICO ON MAY 1. SNOW COURSES ON THE RIO GRANDE IN COLORADO INDICATE THE SNOW PACK IS ONLY ABOUT ONE-HALF OF NORMAL. SNOW FALL DURING APRIL WAS MUCH BELOW NORMAL.

SOIL MOISTURE



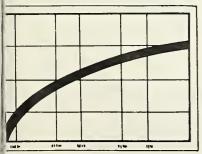
MOUNTAIN SOILS CONTAIN A NEAR AVERAGE A-MOUNT OF WATER FOR THIS DATE. MOST OF THE SOIL MOISTURE STATIONS ARE LOCATED IN THE 8,000 TO 10,000 FOOT ELEVATION AND MOST OF THE SNOW HAS MELTED IN THE AREA. VALLEY SOILS ARE VERY DRY IN ALL AREAS.

- RESERVOIR STORAGE



MOST RESERVOIRS IN NEW MEXICO CONTAIN LESS WATER THAN THEY NORMALLY DO ON MAY 1. RESERVOIRS IN THE HEADWATER AREA IN COLORADO ARE ALSO SLIGHTLY BELOW NORMAL.

EXPECTED STREAMFLOW



STREAMFIOW ON THE RIO GRANDE IN NEW MEXICO WILL BE SEVERELY SHORT THIS YEAR. FORECASTS ARE GENERALLY LESS THAN 50%. THE LOWER RIO GRANDE WILL HAVE TO RELY HEAVILY UPON GROUND WATER SUPPLIES. VERY LITTLE WATER IS EXPECTED TO FLOW INTO ELEPHANT BUTTE. THE CANADIAN WITH GOOD STORAGE AND FAIRLY GOOD RUNOFF SHOULD BE IN FAIR SHAPE THIS SEASON. RAINFALL IS BADLY NEEDED.

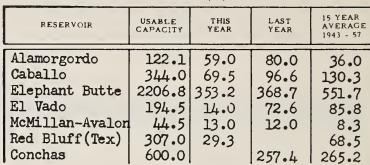
"THE CONSERVATION OF WATER BEGINS WITH THE SNOW SURVEY"
ISSUED BY: SOIL CONSERVATION SERVICE

150

150

150

RESERVOIR STORAGE (1,000 AC. FT.)



MEASURED FIRST OF MONTH

PRECIPITATION

Dec-March

AVERAGE

STATION	AUGUST THROUGH NOVEMBER AVE. DEP.		WIN AVE.	TER DEP.
Lower Rio Grande Middle Rio Grande Upper Rio Grande		19 -1.47		

PRELIMINARY U.S. WEATHER BUREAU DATA AVERAGE OF SELECTED STATIONS

SOIL MOISTURE

STATION	CAPACITY (INCHES)	THIS YEAR		ALL PAST DATA)
Alberta Park (Colo)		5.3		5.6
Aqua Piedra	7.2	5.2	5.1	4.7*
Bateman	6.7	2.9	3.4	2.7*
Big Tesuque	3.7	1.9	2.3	2.4*
Bristol View(Colo)	6.1	6.0	-	4.4
Chamita (New Mex)	8.0	4.9	5.4	5.4×
Fenton Hill	6.5			*
Mogote (Colo)	10.7	7.5		9.0
Red Summit	4.8	2.0	2.1	2.1*
Rio En Medio	3.5	0.4	1.1	1.5*
Taos Canyon	3.3	2.9	3.2	2.9%

ALL PROFILES 4 FEET DEEP *April 1.

1963 1962

LOWER RIO GRANDE

MIDDLE RIO GRANDE

RIO CHAMA

1963

1962

1961

1963

1962

1961

1961

50

UPPER RIO GRANDE

100

100

100

1963 1962 1961

THIS FORECAST STREAM YEAR AVERAGE AND STATION ADDI SEPT. 1943-57 VERAGE Costilla at Costilla 46 11 24 Pecos at Pecos 39 95 41 Rio Chama nr. La Puenta 100 60 167 Rio Grande at Otowi (10)* 90 20 458 Rio Grande at San Marcial 30 9 331 (10)*

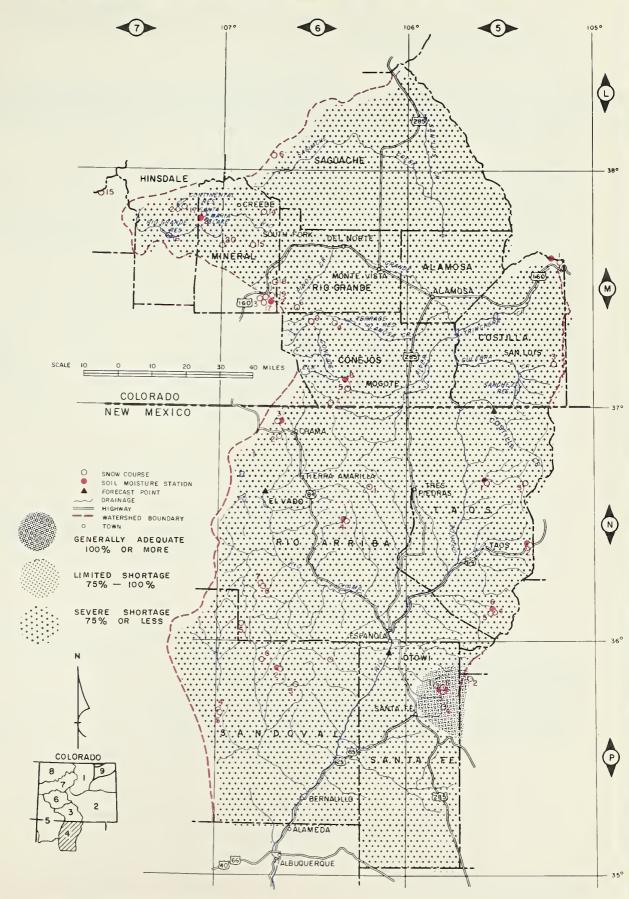
STREAMFLOW FOR ECAST (1.000 AC. FT.)

May APPRIL THROUGH SEPTEMBER

Rio Grande at San Marcial is Forecast at 6 % of the Elephant Butte Irrigation District's Normal.

- ** May through September and May through July on the Rio Grande
- (10) Observed flow plus changes in storage in Santa Maria, Rio Grande, Continental, Terrace, Sanchez, Platoro and El Vado Reservoirs.
 - * Rio Grande at Otowi and Rio Grande at San Marcial Forecast and Average Mar-July inclusive.

RIO GRANDE WATERSHED IN NEW MEXICO



NT INFORMATIO	ION	PAST F	RECORD
DEPTH C	WATER CONTENT (INCHES)	WATER C (INCHE LAST YEAR	
0 0 0 0 0 4 0 0 0	0 0 1.6 17.6 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2.6 1.6 21.2 31.9 0 0 2.5 23.3 0 16.0 0 0 24.3 1.6 28.0 37.1 0.4 0.3	2.8* 6.3 13.3 0.2* 2.8 11.0* 2.2* 5.9* 1.0 0.7 0.6 21.9 2.3 25.4 30.5*

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DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE

Snow Survey Colorado State University Ft, Collins, Colorado

OFFICIAL BUSINESS

WATER SUPPLY OUTLOOK WATERSHED V
FOR THE SOIL CONSERVATION DISTRICTS IN THE

SAN MIGUEL - DOLORES - ANIMAS - SAN JUAN WATERSHEDS IN COLORADO AND NEW MEXICO

as of MAY 1, 1963

U. S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE COLORADO EXPERIMENT STATION - STATE ENGINEERS OF COLORADO AND NEW MEXICO

SNOW COVER



SNOW PACK OVER THIS ENTIRE BASIN IS DEFICIENT.

LAST MONTH IT LOOKED LIKE A NORMAL SNOW PACK MIGHT

DEVELOP, HOWEVER, APRIL SNOWS FELL FAR BELOW NORMAL

FOR THAT MONTH. ACTUALLY SNOW PACK IS NOW ONE OF

THE LOWEST ON RECORD. PRACTICALLY ALL SNOW HAS DIS
APPEARED BELOW THE 9,800 FEET LEVEL.

SOIL MOISTURE



MOUNTAIN SOILS HAVE BEEN SOMEWHAT DEFICIENT ALL YEAR AND ARE JUST NOW COMING UP TO NORMAL. THIS CONDITION IS PRIMARILY DUE TO MELTING SNOW. SOME REDUCTION IN RUNOFF WILL OCCUR BECAUSE OF THE LACK OF MOUNTAIN SOIL MOISTURE. VALLEY SOILS ARE DRY.

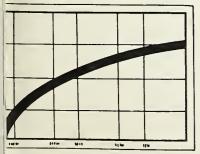
RESERVOIR STORAGE



RESERVOIR STORAGE IS SLIGHTLY BETTER THAN NOR-MAL IN BOTH GROUNDHOG AND VALLECITO RESERVOIRS.

VALLECITO RESERVOIR NOW CONTAINS 72,600 ACRE FEET.

EXPECTED STREAMFLOW



FORECASTS FOR THE STREAMS IN THIS AREA ARE CENERALLY IN THE 65% TO 75% GROUP WITH THE PIEDRA BEING FORECAST AT 48% OF THE 15 YEAR AVERAGE. WATER USERS DEPENDING ON DIRECT FLOW RIGHTS WILL HAVE SOME EARLY SEASON SHORTAGES AND PRACTICALLY NONE TOWARD THE END OF THE WATER YEAR.

"THE CONSERVATION OF WATER BEGINS WITH THE SNOW SURVEY"
ISSUED BY: SOIL CONSERVATION SERVICE

F. A. Mark, State Conservationist,
Colorado
Benny Martin, Area Conservationist,
Monte Vista, Colorado
E. A. Nicholson, Area Conservationist,
Grand Junction, Colorado

C. A. Tidwell, State Conservationist
New Mexico

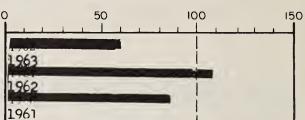
J. B. Christy, Area Conservationist Albuquerque, New Mexico

WATER SUPPLY OUTLOOK IN PERCENT OF 1943-57 AVERAGE

150

SAN JUAN 0 50 100 1963

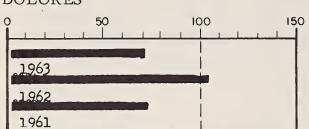
PIEDRA-PINOS-FLORIDA



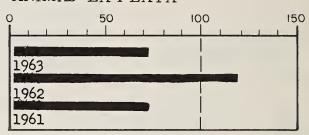
DOLORES

1962

1961



ANIMAS-LA PLATA



Dec-March

RESERVOIR STORAGE (1,000 AC. FT.)

PRECIPITATION	N
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RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	15 YEAR AVERAGE 1943 - 57
Groundhog	21.7	9.5	9.0	9.2
Vallecito		72.6	57.0	64.3

STATION	AUGUST THROUGH NOVEMBER AVE. DEP.		WIN AVE.	TER DEP.
Dolores	4.75		2.83	-2.33
San Juan	7.10		6.49	-1.41

MEASURED FIRST OF MONTH

AVERAGE

PRELIMINARY U.S. WEATHER BUREAU DATA AVERAGE OF SELECTED STATIONS

SOIL MOISTURE

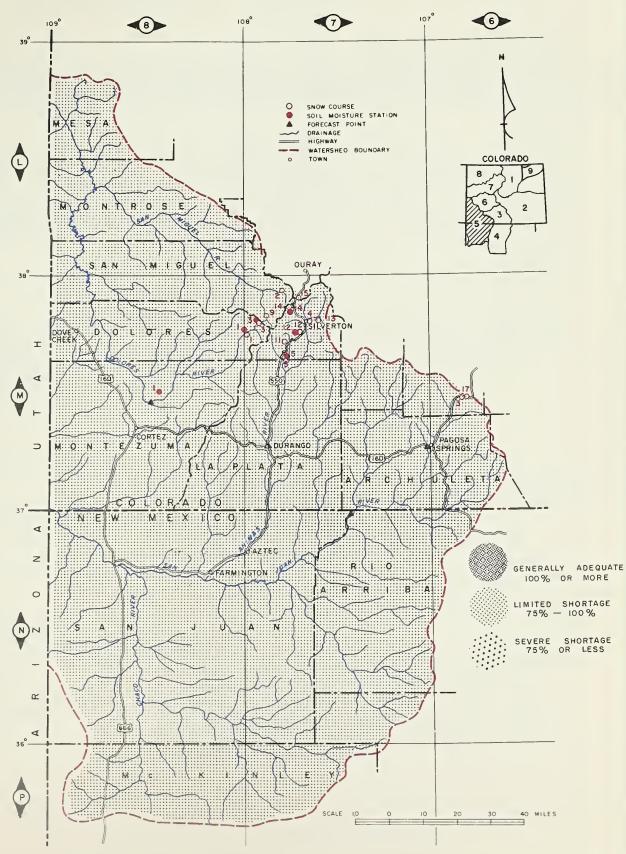
STATION	(INCHES)	YEAR	YEAR	(ALL PAST DATA)
Cascade Dolores Lizzard Head Mineral Creek Molas Lake Rico	9.1	6.6	6.9	6.8
	19.6	*	15.9	11.4
	11.8	9.0	9.8	8.5
	5.7	3.9	4.0	4.1
	9.4	6.4	6.4	5.8
	13.8	8.6	9.9	9.0

Out of Order

STREAMFLOW	FORECAST	(1,000	AC.	FT.)
Matr APRI	L THROUGH SEPTEM	BER		

SIKEAM	FORECAST *APRIL - SEPT.	THIS YEAR % AVERAGE	AVERAGE 1943-57
Animas at Durango Dolores at Dolores Florida near Hermosa LaPlata at Hesperus Los Pinos near Bayfield* Piedra Creek near Piedra San Juan at Rosa, N. M. * May through September	265	62	426
	180	76	238
	40	74	54
	18	78	23
	144	69	206
	74	48	155
	284	61	463

SAN MIGUEL - DOLORES - ANIMAS - SAN JUAN WATERSHEDS IN COLORADO AND NEW MEXICO



SNOW		CURRE	NT INFORMA	TION	PAST R	ECORD
SNOW COURSE	NO.	DATE OF SURVEY	SNOW DEPTH (INCHES)	WATER CONTENT (INCHES)	WATER CO (INCHE LAST YEAR	
SAN JUAN RIVER Chama Divide (B) (New Mexico) Chamita (B) (New Mexico) Upper San Juan (Colorado) Wolf Creek Pass (B) Wolf Creek Summit ANIMAS RIVER Cascade Howardville Ironton Park (B) Mineral Creek Molas Lake Red Mountain Pass Silverton Sub-Station Spud Mountain DOLORES RIVER Lizzard Head Rico Telluride Trout Lake	6N2 6N3 6M3 6M1 7M5 7M13 7M6 7M14 7M12 6M19 7M1 7M1 7M2 7M9	4-29 4-29 4-29 4-29 4-29 4-29 4-29 4-29	0 0 37 21 65 0 8 0 6 8 61 0 47 19 0 0	0 0 12.5 8.7 21.3 0 2.0 0 1.3 2.9 24.3 0 15.4 8.7 0 0.5	0 0.4 35.5 28.0 37.1 3.0 9.8 6.8 11.3 9.7 35.3 0 26.2 17.9 0 0	 30.3 25.4 30.5* 7.0 9.3* 6.7* 25.6* 0.5 21.2* 12.9 1.3 1.2 8.6*

NOTE: * - 1943 - 57 (ADJUSTED AVERAGES)
NS - NO SURVEY
(A) - AIR OBSERVED
(B) - ON ADJACENT DRAINAGE

This Report Prepared by
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SOIL CONSERVATION SERVICE

Snow Survey Colorado State University Ft. Collins. Colorado

OFFICIAL BUSINESS

WATER SUPPLY OUTLOOK FOR THE SOIL CONSERVATION DISTRICTS IN THE

GUNNISON RIVER WATERSHED IN COLORADO

as of

MAY 1, 1963

U. S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE COLORADO EXPERIMENT STATION - STATE ENGINEERS OF COLORADO AND NEW MEXICO

SNOW COVER



SNOW COVER HAS ALMOST DISAPPEARED FROM THE GUNN-ISON DRAINAGE. FOR THE FIFTH STRAIGHT MONTH THE SNOW PACK HAS BEEN BELOW NORMAL. DURING APRIL VERY LITTLE SNOW FELL ANYPLACE ON THE DRAINAGE. THIS IS THE POOREST SNOW COVER SINCE 1954.

SOIL MOISTURE



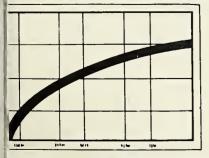
SOIL MOISTURE HAS BEEN DEFICIENT IN THE HIGH MOUNTAINS ALL YEAR AND HASN'T RISEN MUCH DESPITE THE MELTING SNOWS. THIS WILL REDUCE THE WATER YIELD FROM THE LITTLE SNOW THAT IS IN THE MOUNTAINS.

RESERVOIR STORAGE



CARRYOVER STORAGE IN TAYLOR PARK RESERVOIR IS 80,000 ACRE FEET COMPARED TO A NORMAL OF 67,000. WATER USERS THAT HAVE TAYLOR PARK RESERVOIR AS A SUPPLEMENTAL SUPPLY, WILL RECEIVE SOME HELP FROM THIS WATER SOURCE.

EXPECTED STREAMFLOW

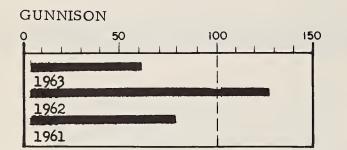


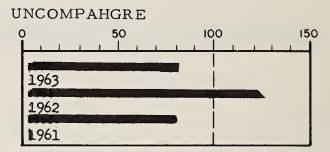
MAY-SEPTEMBER FORECAST FOR THE GUNNISON AT GRAND JUNCTION IS 690,000 ACRE FEET. THIS IS ONLY 57% OF THE 1943-57 AVERAGE. SHORTAGES WILL EXIST ALL ALONG THE MAIN STEM. WATER SUPPLIES FROM THE UNCOMPAHGRE SHOULD BE SLIGHTLY BETTER. IT IS BEING FORECASTED AT 78% OF AVERAGE.

"THE CONSERVATION OF WATER BEGINS WITH THE SNOW SURVEY"

ISSUED BY: SOIL CONSERVATION SERVICE

WATER SUPPLY OUTLOOK IN PERCENT OF 1943-57 AVERAGE





RESERVOIR STORAGE (1,000 AC. FT.)

RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	15 YEAR AVERAGE 1943 - 57
Taylor Park	106.2	80.0	83.6	67.0

DD	ECIP	דיר ב	MOL
PK	FOIL.	II MI	

De	c-l	lar	ch
_			_

STATION	AUGUST THROUGH NOVEMBER AVE. DEP.		WIN	TER DEP.
Gunnison	3.01	-1.49	4.18	-•39

MEASURED FIRST OF MONTH

SOIL MOISTURE

PRELIMINARY U.S. WEATHER BUREAU DATA AVERAGE OF SELECTED STATIONS

STREAMFLOW FORECAST (1,000 AC. FT.

				VAPRIE THROUGH SEPTEMBER					
STATION	CAPACITY (INCHES)	THIS YEAR	LAST YEAR	AVERAGE (ALL PAST DATA)		STREAM AND STATION	FORECAST APRIL - SEPT.		AVERAGE 1943-57
King Maroon Mineral Cree Placita	3.3 5.9 k 5.7 9.3	2.4 3.9	5.9	5.7 4.1		Gunnison nr. Grand Jct. Surface Cr. at Cedaredge Uncompangre at Colona *May through September	690 10 101	57 63 78	1209 16 130

GUNNISON RIVER WATERSHED IN COLORADO



SNOW		CURRE	NT INFORMA	TION	PAST R	ECORD
SNOW COURSE	NO.	DATE OF SURVEY	SNOW DEPTH (INCHES)	WATER CONTENT (INCHES)	WATER CONTROL (INCHE	
Black Mesa	7K3 7L5 7L5 7L2 6L6 7L3 7K4 7K4 7K1 7K1 7K6 7K6 7K6 7K6 7K6 7K6 7K6 7K6 7K6 7K6	4-30 4-30 4-29 4-23 4-25 4-25 4-27 Est. 4-27 4-26 4-26 4-26 4-26 4-26 4-26 4-26 4-26 4-26 4-28	36 20 0 0 0 29 0 0 10 21 0 6 2 29 27 36 12 0 19 61 0	10.2 7.1 0 0 0 10.6 0 0 3.0 9.8 0 1.3 0.6 0.7 12.1 10.0 14.1 4.6	26.1 1.0 2.6 9.3 22.8 2.9 15.0 21.0 11.6 11.3 8.6 11.4 28.7 19.9 32.8 11.3	22.7 2.8* 7.9 14.4 17.7 12.2* 9.3* 8.8 7.4 25.5 16.7 29.4 7.0 12.9 25.6* 1.2 8.6*

NOTE: * - 1943 - 57 (ADJUSTED AVERAGES)
NS - NO SURVEY
(A) - AIR OBSERVED
(B) - ON ADJACENT DRAINAGE

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as of MAY 1, 1963

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SNOW COVER



SNOW COVER AT ALL ELEVATIONS IS MUCH BE-LOW NORMAL. PRACTICALLY ALL SNOW HAS MELTED OR EVAPORATED AT LOW TO MEDIUM ELEVATIONS. SOME SNOW COURSES ARE APPROACHING THE MINIMUM OF RE-CORD. NO HOPE REMAINS FOR INCREASING THE SNOW PACK.

SOIL MOISTURE



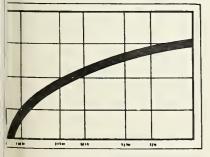
MOUNTAIN SOILS HAVE BEEN DRY ALL WINTER.
THE MOISTURE IN HIGH ELEVATION STATIONS ARE NOW
STARTING TO INCREASE. THIS IS NORMAL AS THE SNOW
STARTS TO MELT. VALLEY SOILS VARY. UPPER AREAS
ARE IN PRETTY GOOD SHAPE, LOWER AREA ARE REPORTING FAIR TO POOR SOIL MOISTURE CONDITIONS.

RESERVOIR STORAGE



STORAGE IN GREEN MOUNTAIN RESERVOIR IS ONLY 8,700 ACRE FEET. THIS IS CONSIDERABLY BELOW NOR-MAL. IT IS VERY DOUBTFUL IF THERE WILL BE SUFFI-CIENT RUNOFF TO FILL THIS RESERVOIR THIS SUMMER.

EXPECTED STREAMFLOW



FORECASTS OF THE MAY-SEPTEMBER FLOW ARE FAR BELOW NORMAL WITH THE WILLIAMS FORK THE LOWEST OF ALL WITH ONLY 41% OF AVERAGE. LATE SEASON SHORTAGES WILL DE-VELOP OVER THE ENTIRE MAIN STEM AREA OF THE COLORADO.

"THE CONSERVATION OF WATER BEGINS WITH THE SNOW SURVEY"

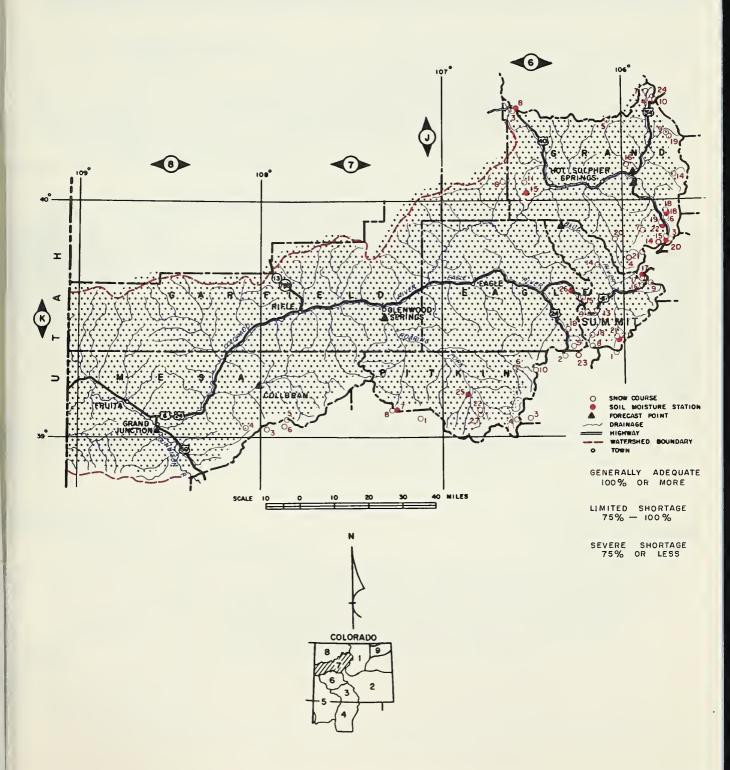
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SNOW		-	NT INFORMA		PAST RECORD		
SNOW COURSE	NO.	DATE	SNOW DEPTH	WATER			
		SURVEY	(INCHES)	(INCHES)	LAST YEAR	AVERAGI 1943 - 57	
COLORADO RIVER (UPPER)	/					5.0	
Arrow	5K6	4-29	11	2.6	8.9	7.8	
Berthoud Pass	5K3	4-29	15	4.4	15.8	14.3	
Berthoud Summit	5K14	4-30	34	13.3	21.1	20.2*	
Blue River	6K2l	4-26	0	0	5.3		
Cooper Hill	6K23	4-28	35	9.0	15.2		
Fiddlers Gulch	6K5	4-30	24	8.6	17.0	15.9	
Fremont Pass	6K8	4-29	39	12.6	21.2	18.6	
Frisco	6K13	4-28	5	0.3	5.7	5.6*	
Glen Mar Ranch	6K20	4-26	Ó	0	2.9	4.8*	
Gore Pass	6J11	4-26	10	4.0	8.2	9.5*	
Granby	5J16	4-26	0	0	3.2	2.9*	
Grand Lake	5J19	4-27	o	0			
		4-28		1 -	4.7	3.8*	
Grizzly Peak	5K9		40	12.5	21.3	20.1	
Hoosier Pass (B)	6Kl	4-26	20	7.2	12.9	11.9	
Jones Pass	5K21	4-26	12	4.3	15.7		
Lake Irene	5J10	4-25	45	16.6	25.6	24.3	
Lapland	5K7	4-26	2	0.6	9.0	9.1	
Lulu	5J7	4-26	40	14.5	25.4	19.0	
Lynx Pass	6 K 6	4-26	0	0	10.0	7.5	
McKenzie Gulch	6K28	4-26	0	0	0		
Middle Fork Camp Ground	5K4	4-26	0	0	4.9	6.0	
Milner Pass	5J24	4-25	24	9.0	14.2	10.5*	
Monarch Lake	5J14	4-29	8	2.5	5.9	5.4*	
North Inlet Grand Lake	5J9	4-28	7	1.7	6.3	7.0	
Pando	6K19	4-29	5	0.5	6.1	8.1*	
Phantom Valley	534	4-27	í	0.2	7.5	6.6	
Ranch Creek	5K18	4-29	15	4.0			
Shrine Pass		4-29			7.0	18.7	
	6K9		35	11.6	23.1		
Snake River	5K16	4-28	0	0	0.1	5.6*	
Summit Ranch	6K14	4-26	0	0	3.8	6.6*	
Tennessee Pass	6K2	4-27	9	3.0	9.3	6.8	
Vail Pass	6K15	4-29	24	7.1	16.5	16.8*	
Vasquez Creek	5K19	4-29	15	3.6	14.2		
Willow Creek Pass	6J5	4-26	14	5.5	14.3	11.5	
ROARING FORK RIVER							
Aspen	7J22	4-24	34	10.5	20.9		
Independence Pass Tunnel	6K4	4-30	14	3.8	19.3	17.8	
Ivanhoe	6K10	4-30	35	13.1	24.0	17.8*	
Lift	7K27	4-24	36	12.2	26.3		
McClure Pass	7K8	4-26	0	0	11.6	12.2*	
Nast	6K6	4-25	Ö	Ö	0.1	1.6	
North Lost Trail	7Kl	4-26	Ö	0	8.6	8.8	
PLATEAU CREEK	INT	7 ~~			0.0	0.0	
Alexander (B)	772	1 20	26	10.2	26 7	22 7	
· ·	7K3	4-30	36		26.1	22.7	
Mesa Lakes	7K4	4-27	10	3.0	15.0	14.4	
Park Reservoir (B)	7K6	4-26	29	12.1	28.7	25.5	
Trickle Divide	7K5	4-26	36	14.1	32.8	29.4	

NOTE: * - 1943 - 57 (ADJUSTED AVERAGES)

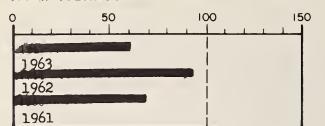
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COLORADO RIVER WATERSHED IN COLORADO

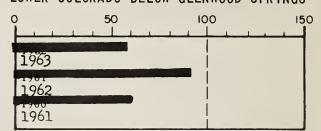


WATER SUPPLY OUTLOOK IN PERCENT OF 1943-57 AVERAGE

UPPER COLORADO ABOVE GLENWOOD SPRINGS



LOWER COLORADO BELOW GLENWOOD SPRINGS



RES

RESERVOIR	STORAG	GE (1,	000 A	.C. FT) PRECIPI	TATION	Dec-March
RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	15 YEAR AVERAGE 1943 - 57	STATION	AUGUST THROUGH NOVEMBER AVE. DEP.	WINTER AVE. DEP.
Granby * Green Mt.	465.5			185.3 52.3	1	3.62 -2.20 3.8975	6.35 -2.83

MEASURED FIRST OF MONTH

PRELIMINARY U.S. WEATHER BUREAU DATA AVERAGE OF SELECTED STATIONS

SOIL MOISTURE

STATION	CAPACITY (INCHES)	THIS YEAR	LAST YEAR	AVERAGE (ALL PAST DATA)
Berthoud Pass Blue River Gore Maroon Muddy Pass Placita Ranch Creek Vail Pass Vasquez		3.8 4.2 2.6 11.1 6.9 12.1 11.0	3.9 4.2 4.5 5.9 11.1 7.2 7.7 12.3	2.8 2.7 4.4 5.7 8.5 8.1 6.5 11.1 9.2

ALL PROFILES 4 FEET DEEP

STREAMELOW FORECAST (1,000 AC. FT.) APRIL THROUGH SEPTEMBER

STREAM *EQRE: AND -APRI STATION SEP	L -	THIS YEAR % ERAGE	AVERAGE 1943-57
Blue River abv. Green Mt.Dam Colo. R. nr. Granby (4)	171 149	62 66	275 223
Colo. R. at Glenwood Sprs(5) Plateau Cr. near Collbran	960	67	1428
Roaring Fork at Fl. Spgs. (6)	490	65	757
Williams Fork nr. Parshall Willow near Granby	30	41 55	73
* May Through September	22	ررا	10

- (4) Observed flow plus diversions by Adams tunnel and Grand River ditch plus change in storage in Granby Reservoir.
- (5) Observed flow plus the changes as indicated in (4) plus Moffat Ditch.
- (6) Observed flow plus diversion through Twin Lakes tunnel.

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DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE

Snow Survey Colorado State University Ft. Collins, Colorado

OFFICIAL BUSINESS

WATER SUPPLY OUTLOOK
FOR THE SOIL CONSERVATION DISTRICTS IN THE

YAMPA, WHITE, AND NORTH PLATTE RIVERS WATERSHEDS IN COLORADO

as of MAY 1, 1963

U. S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE COLORADO EXPERIMENT STATION - STATE ENGINEERS OF COLORADO AND NEW MEXICO

SNOW COVER



THE ONLY AREA IN THESE DRAINAGES THAT HAS GOTTEN ANY MATERIAL AMOUNT OF SNOW FALL THIS MONTH IS THE ELK RIVER BASIN. SNOW PACK HERE IS ABOUT 80% OF NORMAL. THE WHITE HAS PRACTICALLY NO SNOW AND THE NORTH PLATTE IS ABOUT 65% OF AVERAGE.

SOIL MOISTURE



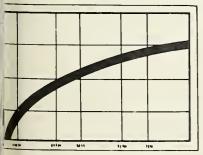
SOIL IN THE MOUNTAINS HAVE BEEN DRY ALL WIN-TER. THIS WILL REDUCE RUNOFF. THE SOIL MANTLE WILL ABSORB LARGE AMOUNTS OF THE SNOW WATER PRIOR TO ANY WATER REACHING THE STREAMS.

RESERVOIR STORAGE



THERE ARE NO MAJOR RESERVOIRS IN COLORADO ON THESE BASINS, HOWEVER, LARGE RESERVOIRS DOWNSTREAM ON THE NORTH PLATTE WILL BE GREATLY AFFECTED. RIGHT NOW THE DOWN STREAM STORAGE IS ABOUT 90% OF NORMAL.

EXPECTED STREAMFLOW

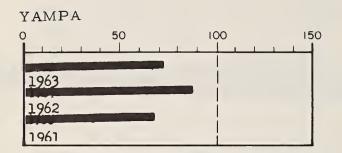


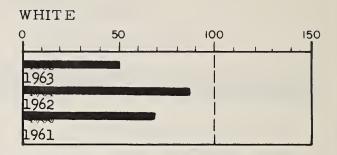
ALL RIVER BASINS IN THIS AREA WILL HAVE SHORT-AGES THIS YEAR, HOWEVER, IRRIGATED AREAS REACHED BY THE ELK RIVER SHOULD HAVE ONLY LIMITED LATE SEASON DEFICIENCIES. OTHER AREAS WILL HAVE LIMITED EARLY SEASON AND SEVERE SHORTAGES LATER IN THE SEASON UNLESS RAINFALL IS EXCESSIVE THIS SUMMER.

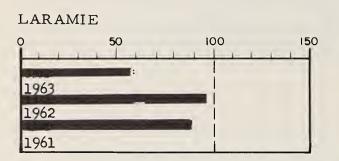
"THE CONSERVATION OF WATER BEGINS WITH THE SNOW SURVEY"

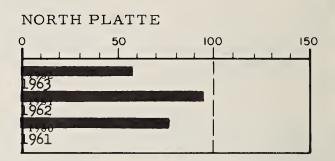
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WATER SUPPLY OUTLOOK IN PERCENT OF 1943-57 AVERAGE









SOIL MOISTURE

AVERAGE CAPACITY THIS LAST YEAR STATION (ALL PAST (INCHES) YEAR DATA) Hahn's Peak 19.0 19.0 19.0 Laramie Road 12.4 12.4 11.7 9.0 Muddy Pass 11.1 8.5 11.1 11.1 Two Mile 9.1 6.7 5.6 4.4 Willow Pass 9.5 8.0 6.9 7.0

ALL PROFILES 4 FEET DEEP

STREAMFLOW FORECAST (1,000 AC. FT.)

Mayabril through sept	EMBER		
STREAM AND STATION	FORECAST APRIL - SEPT.	THIS YEAR % AVERAGE	AVERAGE 1943-57
Elk at Clark Laramie at Jelm Little Snake at Lilly	165 47 132	83 44 46	200 108 289
White at Meeker Yampa at Steamboat Sprgs. *May through September	162 178		3 <u>04</u> 241

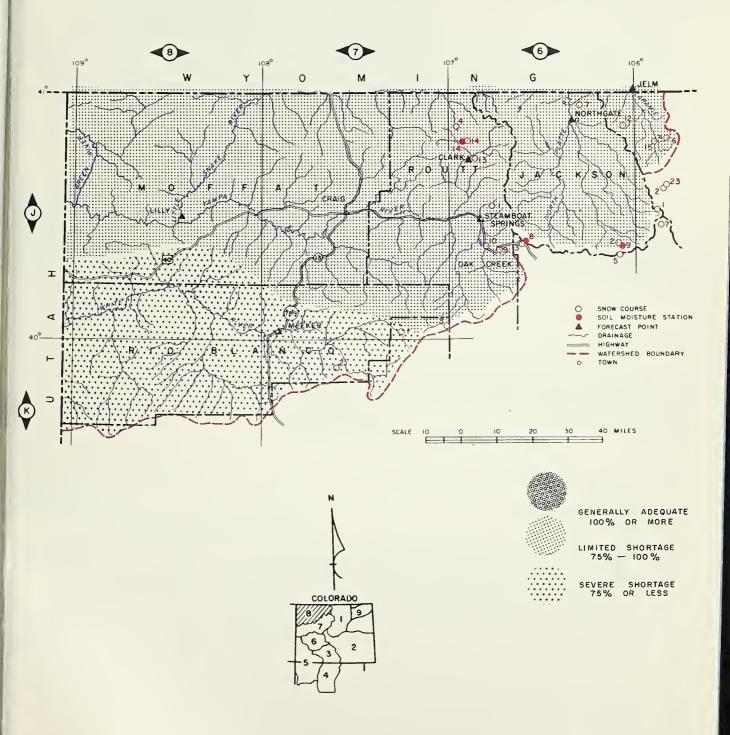
PRECIPITATION

Dec-March

STATION	AUGUST NOVEN AVE.	THROUGH MBER DEP.	AVE.	NTER DEP.
North Platte	2.13	46	1.92	50
White	3.43		3.88	48
Yampa	3.74		5.86	-1.44

PRELIMINARY U.S. WEATHER BUREAU DATA AVERAGE OF SELECTED STATIONS

YAMPA, WHITE, AND NORTH PLATTE RIVERS WATERSHEDS IN COLORADO



	CONTENT CHES) AR AVERAGE 1943 - 57
NORTH PLATTE RIVER Cameron Pass Columbine Lodge Deadman Hill (B) McIntyre (B) Northgate Park View Roach (B) Willow Creek Pass (B) YAMPA RIVER Bear River Clark Columbine Lodge (B) Dry Lake Elk River Hahn's Peak Lynx Pass (B) Rabbit Ears Yampa View WHITE RIVER Burro Mountain Rio Blanco 5J1 4-26 45 19.8 36.5 21.9 23.2 17.5 4-27 24 5.7 8.0 4-26 1 0.4 4.0 9.1 4-27 50 11.5 24.0 9.1 6.5 14.3 4-29 0 0 0 8.4 6.5 14.3 15.6 6.5 15.3 6.5 16.5 16.5 16.5 16.5 16.5 16.5 16.5	25.6 21.3 17.7 9.0* 2.7* 6.5 20.9 11.5 21.3 15.2 12.8 7.5 26.1* 8.3*

NOTE: * - 1943 - 57 (ADJUSTED AVERAGES)
NS - NO SURVEY
(A) - AIR OBSERVED
(B) - ON ADJACENT DRAINAGE

This Report Prepared by
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Colorado State University
Ft. Collins, Colorado

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LOWER SOUTH PLATTE RIVER WATERSHED IN COLORADO

as of MAY 1, 1963

U. S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE COLORADO EXPERIMENT STATION - STATE ENGINEERS OF COLORADO AND NEW MEXICO

SNOW COVER



SNOW COVER STILL IS MUCH BELOW NORMAL WITH ALMOST ALL HOPE GONE NOW FOR EVEN AN AVERAGE SNOW PACK. ONLY ONE SMALL AREA NOW CONTAINS MORE SNOW THAN ON MARCH 1. SNOW IS MELTING RAPIDLY AND PRACTICALLY ALL SNOW HAS MELTED UP TO AN ELEVATION OF 9,800 FEET. SNOW COVER THROUGHOUT THE BASIN IS 61% OF NORMAL.

SOIL MOISTURE



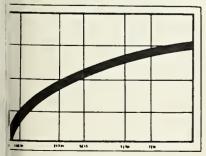
SOIL MOISTURE IS NOW INCREASING AT THE HIGHER ELEVATIONS, DUE TO THE MELTING SNOW. NONE OF THE STATIONS ARE INDICATING CAPACITY WHICH MEANS NOT ENOUGH SNOW HAS MELTED TO CAUSE MATERIAL RUNOFF. PRACTICALLY ALL STATIONS ARE NOW VOID OF SNOW. VALLEY SOIL ARE EXTREMELY DRY OVER THE ENTIRE WATERSHED.

RESERVOIR STORAGE



RESERVOIR STORAGE IS EXCELLENT AND WILL GREATLY AUGMENT THE LOWER SOUTH PLATTE RUNOFF WHICH IS EXPECTED TO BE CONSIDERABLY BELOW NORMAL. STORAGE WILL BE USED HEAVILY THIS SUMMER.

EXPECTED STREAMFLOW



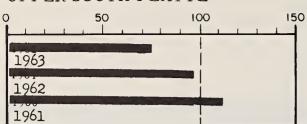
STREAMFLOW WILL BE MUCH BELOW NORMAL ON THE LOW-ER SOUTH PLATTE. UPSTREAM FORECASTS RANGE FROM 64% AVERAGE TO 80%. ACTUALLY THE RUNOFF IN THE SOUTH PLATTE WILL PROBABLY BE LESS THAN 60% OF NORMAL. LATE SEASON SHORTAGES WILL EXIST. PUMPING WILL BE HEAVILY RELIED ON.

"THE CONSERVATION OF WATER BEGINS WITH THE SNOW SURVEY"

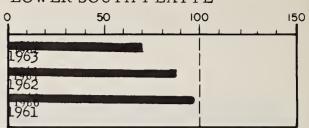
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WATER SUPPLY OUTLOOK IN PERCENT OF 1943-57 AVERAGE

UPPER SOUTH PLATTE



LOWER SOUTH PLATTE



RESERVOIR STORAGE (1,000 AC. FT.)

SOIL MOISTURE

RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	15 YEAR AVERAGE 1943 - 57	STATION	CAPACITY (INCHES)	THIS YEAR	LAST YEAR	AVERAGE (ALL PAST DATA)
Carter * Cheeseman Eleven Mile Empire Horsetooth * Jackson Lake Julesburg Point of Rocks Prewitt Riverside	108.9 79.0 81.9 37.7 143.5 35.4 228.2 70.0 32.8 57.5	104.0 40.5 96.3 33.0 114.7 33.4 22.5 69.5 24.1 56.7	107.3 79.1 98.0 33.6 137.4 33.9 19.8 64.8 27.4 57.5	69.2 52.7 69.4 29.5 94.0 34.3 22.1 61.7 21.5 50.4	Alpine Camp Beaver Dam Feather Guard Station Hoop Creek Hoosier Pass Kenosha Pass Laramie Road Two Mile Clear Creek	6.9 7.1 10.1 6.9 4.9 7.8 4.4 12.4 9.1 9.5	6.0 5.0 9.2 5.0 3.9 4.4 3.6 8.7 4.4	4.9 6.3 9.6 4.7 3.6 7.8 4.0 11.7 6.7 7.1	4.3 4.7 8.1 4.7 2.9 5.9 3.7 9.0 5.6 5.9
					AI	L PROFIL	ES 4 FEET) DEEP	1 1

MEASURED FIRST OF MONTH

STREAMFLOW FORECAST (1,000 AC. FT.) May APRIL THROUGH SEPTEMBER

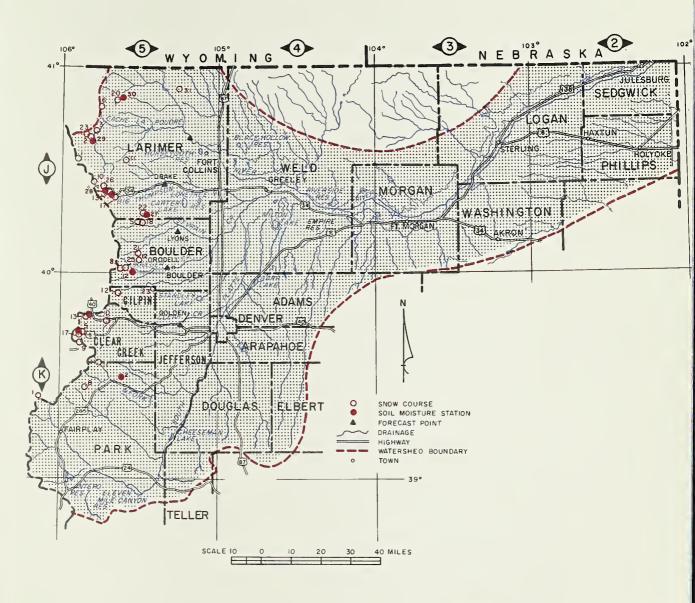
RECIPITATIONec-March		arch	S TREAM AND STATION	APRIL - SEPT.	THIS YEAR % AVERAGE	AVERAGE 1943-57			
	AUGUST 1 NOVEN	ABER	WINT AVE.	TER DEP.	Big Thompson at Drake(2) Boulder at Orodell Cache La Poudre at Canon(80 34 1) 115	65	101 52 183	
	1.70	-2.16	2.89 1.69	46	Clear Creek at Golden (3) Saint Vrain at Lyons *May through September		71	13 ² 80	

PR

STATION	AUGUST THROUG NOVEMBER AVE. DEP	WINTER
Upper So. Pl.	2.28 -2.	2.8983
Lower So. Pl.	1.70 -2.	16 1.6946

PRELIMINARY U.S. WEATHER BUREAU DA AVERAGE OF SELECTED STATIONS

LOWER SOUTH PLATTE RIVER WATERSHED IN COLORADO







SNOW		CURRE	NT INFORMA	TION	PAST R	ECORD
SNOW COURSE	NO.	DATE OF SURVEY	SNOW DEPTH (INCHES)	WATER CONTENT (INCHES)	WATER C (INCHE	
SOUTH PLATTE RIVER AND TRIBUTARIES Baltimore Berthoud Falls Big South Boulder Falls Cameron Pass Chambers Lake Copeland Lake Deadman Hill Deer Ridge Empire Geneva Park Grizzly Peak (B) Hidden Valley Hoosier Pass Hour Glass Lake Jefferson Creek Lake Irene (B) Long's Peak Lost Lake Loveland Pass Loveland Lift No. 1 Pine Creek Red Feather Two Mile University Camp Ward Wild Basin	5K23 5K13 5J3 5J25 5J1 5J2 5J18 5J10 5K11 5K9 5J11 5K8 5J11 5K8 5J10 5J22 5J23 5K5 5J20 5J26 5J26 5J21 5J26 5J21 5J26 5J21 5J20 5J26 5J21 5J20 5J21 5J21 5J21 5J22 5J23 5J23 5J23 5J23 5J23 5J23 5J23	4-30 4-30 4-27 4-29 4-26 4-29 4-29 4-29 4-28 4-29 4-25 4-28 4-25 4-28 4-28 4-28 4-28 4-29 4-28 4-29 4-29 4-29 4-29 4-29	0 5 0 17 45 2 0 3 0 0 40 32 20 7 5 45 26 14 8 61 0 7 47 37 5 30	0 2.3 0 6.7 19.8 1.0 0 0 0 12.5 11.0 7.2 2.7 1.9 16.6 9.3 5.6 5.3 18.7 0 3.0 15.6 15.2 2.2 11.6	2.4 11.5 0 11.6 36.5 2.3 0.2 17.5 2.5 6.1 0 21.3 14.6 12.9 4.0 8.2 25.6 7.8 9.1 15.5 28.2 0 1.7 22.9 16.3 2.0 8.2	13.2* 0.9 12.5* 25.6 4.9 2.3* 17.7 3.6* 2.1* 20.1 13.4 11.9 7.8 8.0 24.3 13.9* 14.7 3.9 17.2* 25.1 6.1* 15.2

NOTE: * - 1943 - 57 (ADJUSTED AVERAGES)

NS - NO SURVEY
(A) - AIR OBSERVED
(B) - ON ADJACENT DRAINAGE

G310---

This Report Prepared by
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SOIL CONSERVATION SERVICE

Snow Survey Colorado State University Ft. Collins, Colorado

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